

8. A fragment consisting of the PIR domain or the PIR-SH2 domain of any one of the proteins in the Grb7 family of proteins.
9. The fragment of claim 8 selected from the group consisting of any one of the peptide sequences of SEQ ID NO: 1 to SEQ ID NO: 28.
10. A method for detecting molecules capable of modulating the tyrosine kinase activity of the insulin receptor, comprising:
  - a) bringing an activated insulin receptor into contact with a fragment consisting of the PIR domain or the PIR-SH2 domain of any one of the proteins in the Grb7 family of proteins, and the molecule to be tested, under conditions which allow binding of said fragment to said receptor,
  - b) adding a tyrosine kinase substrate,
  - c) measuring the tyrosine kinase activity, and
  - d) determining the modulation of the tyrosine kinase activity by comparison with a control consisting of the activated insulin receptor and said fragment.
11. The method of claim 10, wherein said fragment is selected from the group consisting of any one of the peptides of SEQ ID NO: 1 to SEQ ID NO: 28.
12. The method of claim 10 further comprising preselection prior to step a) wherein molecules capable of modulating the interactions of a fragment consisting of the PIR domain or the PIR-SH2 domain of any one of the proteins in the Grb7 family of proteins with the insulin receptor are identified, said preselection comprising:
  - 1) immobilizing said fragment on a solid support,

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2) bringing the molecule to be tested into contact with said fragment, then

3) incubating with a labeled and pre-activated insulin receptor, under conditions which allow binding of said receptor to said fragment,

4) separating said labeled receptor not retained on the support,

5) detecting the complex possibly formed between said fragment and said activated insulin receptor, and

6) determining the effect of the molecule by comparison with a control comprising said fragment and said insulin receptor absent the molecule to be detected.

13. The method of claim 12 wherein the fragment is selected from the group consisting of any one of the peptides of SEQ ID NO: 1 to SEQ ID NO: 28.

14. A method of treating a disease involving insulin comprising the administration of an effective amount of a molecule capable of binding to a fragment consisting of the PIR domain or the PIR-SH2 domain of any one of the proteins in the Grb7 family of proteins and of inhibiting the tyrosine kinase activity of the insulin receptor.

15. The method of claim 14, wherein said molecule is identified using the method of claim 10.

16. The method of claim 14, wherein said molecule is identified using the method of claim 11.

17. The method of claim 14, wherein said molecule is identified using the method of claim 12.

*Claim 14*

- 18. The method of claim 14, wherein said molecule is identified using the method of claim 13.
- 19. The method of claim 14, wherein said disease involving insulin is obesity.
- 20. The method of claim 14, wherein said disease involving insulin is diabetes.

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